

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	61	engineering adj (system or objects! or information) same ((runtime or (run adj time)) adj system)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 13:36
L2	0	1 and automationbd	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 13:31
L3	43	1 and automation	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 13:36
L4	76	engineering same ((runtime or (run adj time)) adj system)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 13:38
L5	53	4 and automation	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 13:39
L6	46	automation same ((runtime or (run adj time)) adj system)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 13:44
L7	36	6 and engineering	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 13:39
L8	193	automation and ((runtime or (run adj time)) adj system) and engineering	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 13:45
L9	13	8 and (automation and ((runtime or (run adj time)) adj system) and engineering) with object	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 13:48

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L10	118	8 and (read or reading) and (creat\$6 or generat\$6) and identif\$6	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 13:48
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## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	204	engineering adj system same object	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:21
L2	8035	automation same object	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:22
L3	54	1 and 2	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:06
L4	97	(engineering adj system) same objects!	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:22
L5	44588	automation same (system or objects!)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:23
L6	1845	5 and (runtime or (run adj time)) with (system or objects! or automation)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:32
L7	22	4 and reference with object	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:26
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L9	0	7 and representative same engineering	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:36

## EAST Search History

L10	4	7 and representative same system	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:28
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L12	175	6 and "700"/\$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:44
L13	96	12 and engineering	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:41
L14	3	6 and (read or reading) with engineering with device	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:42
L15	22	5 and (read or reading) with engineering with device	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:44
L16	275	(read or reading) with engineering with device	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:44
L17	9	16 and "700"/\$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:45
L18	3	16 and "709"/\$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:45
L19	5	16 and "717"/\$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:45

## EAST Search History

L20	3	16 and "707"/\$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:46
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DOCUMENT-IDENTIFIER: US 20010037161 A1

TITLE: Method for controlling technical processes

----- KWIC -----

Current US Classification, US Primary

Class/Subclass - CCPR (1):

**700/96**

Current US Classification, US Secondary

Class/Subclass - CCSR (1):

**700/104**

Current US Classification, US Secondary

Class/Subclass - CCSR (2):

**700/97**

Summary of Invention Paragraph - BSTX (6):

[0004] The reference WO 91 19237 and a document by Hilding Elmquist entitled: "A Uniform Architecture For Distributed Automation" (Advances in Instrumentation and Control, U.S., Instrument Society of America, Research Triangle Park, Vol. 46,

Summary of Invention Paragraph - BSTX (20):

[0017] The project planning/programming advantageously takes place on an engineering system, while the software application is executed on a runtime system. The project planning or programming is consequently independent of the execution of the respective actual software application.

Brief Description of Drawings Paragraph - DRTX

(5):

[0022] FIG. 3 illustrates a schematic representation of the development environment for the project planning or programming of the MC application on an engineering system and for the running of the planned/programmed MC application on a runtime system in accordance with an exemplary embodiment of the present invention.

Detail Description Paragraph - DETX (4):

[0028] Referring to the drawings, FIG. 1 illustrates a movement control software system, hereinafter "MC software system," comprising at least one engineering system ES (offline) and a runtime system RS (online). The ES is used by the user to create a movement control application, referred to hereinafter as "MC application" MCA. The RS executes the MCA. The creation of a MCA involves the system configuration, the creation of the user programs at the high-level language level and the transfer of this information into a form which can be executed internally in the RS (executable). The RS executes the

executable.

Detail Description Paragraph - DETX (24):

[0048] Interfaces in the runtime system RS (RS interfaces) are fixed in the movement control runtime system directly. The interfaces are managed and addressed in the engineering system ES via type codes, so that their interconnection is possible.

Detail Description Paragraph - DETX (27):

[0051] The execution of an actually planned software structure takes place in the runtime system RS.

Detail Description Paragraph - DETX (28):

[0052] The most important basic objects BO are the feedback controller objects FCO, the command variable objects CVO and the program processing objects PPO, these objects being presented in more detail below with reference to FIG. 2, beginning with the program processing object PPO.

Detail Description Paragraph - DETX (42):

[0066] In the engineering system ES, an actual control solution corresponding to the respective requirements of the client is configured and programmed using corresponding tools VEW, KON, PRG (management, configuration, programming), the commissioning being supported by further tools INB, MON, DEB (commissioning, monitoring, debugging). The execution of an actually planned software structure with the associated user program takes place in the runtime system RS.

Detail Description Paragraph - DETX (43):

[0067] The engineering system ES accordingly permits the handling of a movement control application (MC application) MCA in engineering terms and, in addition, also the representation of the runtime system RS during the engineering (from project planning through to commissioning).

Detail Description Paragraph - DETX (44):

[0068] For this purpose, the engineering system ES has access to an image of all the basic objects BO that are executable in the runtime system RS. Accordingly, at least the aforementioned feedback controller objects FCO, command variable objects CVO, program processing objects PPO, driver objects DRO and system manager objects SMO are provided as basic object classes.

Detail Description Paragraph - DETX (45):

[0069] Both in the engineering system ES and in the runtime system RS there exists, via the hardware HW-(programming unit or personal computer HW1 for the engineering system ES, control hardware HW2 for the runtime system RS), a complete runtime system with an operating system BS, tools for system management and basic objects BO.

Detail Description Paragraph - DETX (48):

[0072] The overall system comprises a combination of a runtime system, with

a control core as a distributable control operating system, and an engineering system, which permits the graphic programming of the automation project via a corresponding interface.

Detail Description Paragraph - DETX (52):

[0076] Reference is made below to FIG. 6, in which an object structure of a tubular-bag machine is shown, the following procedure being realized:

Claims Text - CLTX (1):

1. A method for project planning and/or programming of a software application for controlling and/or monitoring a technical process, said method comprising: using a plurality of instantiatable basic object types of said software application, said instantiatable basic objects comprising at least feedback controller objects for various feedback controller functions, command variable objects as command variable generators, program processing objects for running predetermined user programs, driver objects for adapting control at interfaces of the various hardware modules and system manager objects as an interface with respect to the operating system, and/or run-up objects for storing the executable; using addressable interfaces for parameterizing and interconnection, said object types being part of a firmware of a runtime system; and at least one program processing object type and at least one driver object type being provided as said instantiatable basic object type, said at least one program processing object type processing a user-definable program and said driver object type driving process hardware.

Claims Text - CLTX (6):

6. The method as claimed in claims 1, wherein said project planning is implemented on an engineering system and wherein said software application is executed on a runtime system.

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L4	97	(engineering adj system) same objects!	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:22
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L16	275	(read or reading) with engineering with device	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:44
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## EAST Search History

L20	3	16 and "707"/\$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:46
L21	5723	engineering same automation	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:52
L22	721	21 and reference with (engineering or automation or system or object)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:48
L23	123	22 and "700"/\$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:49
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L25	14	24 and engineering and automation	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/07 12:52

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**Automation system - Patent 20020082720**

A method for operating an **automation system** according to claim 1, wherein the **engineering system** and/or **runtime system** is produced by the following steps: ...

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**PROVISION OF INFORMATION IN AN AUTOMATION SYSTEM - Patent EP1442340**

1 shows a schematic diagram of a system for provision of information in an **automation system**. The system contains an **engineering system** 3 and a **runtime** ...

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**Automation system for merging automation components - US Patent ...**

The present invention relates to an **automation system** in which a ...  
 The **engineering system** SPSES, MCES or DES generates a **runtime system** for the associated ...

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**Automation system for merging automation components - US Patent ...**

The **automation system** according to claim 1 wherein the data management unit is integrated in the **engineering system**. 3. The **automation system** according to ...  
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**Detail - Automation and Drives Overview - Siemens**

Both the application developed by means of the **engineering system** and the associated **runtime** software modules can be run on different hardware platforms. ...

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**Detail - Automation and Drives Overview - Siemens**

The Simotion system consists of an **engineering system** called "Simotion Scout" which

runs under Windows on commercially available PCs, a **runtime system** which ...  
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### **Automation system - Patent 20020082720**

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### **Automation system for merging automation components - Patent 6757568**

The present invention relates to an **automation system** in which a ... specific interfaces incorporation of **engineering system** and **runtime system** (RS) into ...  
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### **Automation system for merging automation components - US Patent ...**

The present invention relates to an **automation system** in which a ... The **engineering system** SPSES, MCES or DES generates a **runtime system** for the associated ...  
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### **Automation system for merging automation components - US Patent ...**

The **automation system** according to claim 1 wherein the data management unit is integrated in the **engineering system**. 3. The **automation system** according to ...  
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### **Detail - Automation and Drives Overview - Siemens**

The Simotion system consists of an **engineering system** called "Simotion Scout" which runs under Windows on commercially available PCs, a **runtime system** which ...  
[www.automation.siemens.com/.../speeches\\_detail.htm?rssItemURL=/detail\\_rss.php3?template\\_id=316&id=2744](http://www.automation.siemens.com/.../speeches_detail.htm?rssItemURL=/detail_rss.php3?template_id=316&id=2744) - 33k - [Cached](#) - [Similar pages](#)

### **Detail - Automation and Drives Overview - Siemens**

The **engineering system** is responsible for all tasks involving motion control, ... The **runtime system** provides scalable functionality: Simotion handles ...  
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... are available to help you migrate your **automation system** to newer technology. ...  
SIMATIC BATCH is integrated in the **engineering** and **runtime system**, ...  
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Feature: Profinet - linking different worlds

Profinet distinguishes between objects in the **engineering system** (ES object) and objects in the **runtime system** (RT object). The Profinet concept follows the ...  
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Automation system for merging automation components - Patent 6757568

An **automation system** comprising a drive controller component which regulates ...  
interfaces incorporation of **engineering system** and **runtime system** (RS) into ...  
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**automation system** components the so called Electronic. Device Description Language (EDDL) is ... **runtime system** of an engineering console after any update ...[ieeexplore.ieee.org/iel5/7417/20163/00931772.pdf?arnumber=931772](http://ieeexplore.ieee.org/iel5/7417/20163/00931772.pdf?arnumber=931772) - [Similar pages](#)**B&R Perfection in Automation**Configuration of **automation system** in the **engineering system**. ■ Archiving of trend, alarm and protocol data in the **runtime system** ...[www.br-automation.com/cps/rde/xchg/br-productcatalogue/hs.xsl/products\\_85515\\_ENG\\_HTML.htm](http://www.br-automation.com/cps/rde/xchg/br-productcatalogue/hs.xsl/products_85515_ENG_HTML.htm) - 42k - Supplemental Result - Cached - [Similar pages](#)**B&R Perfection in Automation**... data transmission from the actual core of the process **automation system** – the controllers .... **Runtime system** · **Engineering system** · Industrial Ethernet ...[www.br-automation.com/cps/rde/xchg/br-productcatalogue/hs.xsl/products\\_85714\\_ENG\\_HTML.htm](http://www.br-automation.com/cps/rde/xchg/br-productcatalogue/hs.xsl/products_85714_ENG_HTML.htm) - 47k - Cached - [Similar pages](#)**Provision of information in an automation system - IP.com's Patent ...**The system also contains an **engineering system** for generating the information from projected information of the **automation system** and for the automatic ...[www.patentdebate.com/PATAPP/20050015398](http://www.patentdebate.com/PATAPP/20050015398) - Supplemental Result - [Similar pages](#)**Engineering method and system for industrial automation systems ...**A further advantageous embodiment of the present invention for an **engineering system** consists in the fact that the function of the **automation system** can be ...[www.patentdebate.com/PATAPP/20050159932](http://www.patentdebate.com/PATAPP/20050159932) - Supplemental Result - [Similar pages](#)  
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availability of the **automation system**, all system facettes ..... **engineering system** reduces training expenses and com-. missioning time, and standardized ...[www.click4business-supplies.siemens.de/images\\_artikel/e20001-a480-p200-x-7600.pdf](http://www.click4business-supplies.siemens.de/images_artikel/e20001-a480-p200-x-7600.pdf) - [Similar pages](#)**[PDF]** [totally integrated](#)

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Select the engineering and **runtime system** software. according to the size of the

system .... existing process **automation system** for the entire factory, ...

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### **Automation System For Merging Automation Components Patent Detail**

Find information about **Automation system** for merging automation ... further specific interfaces incorporation of **engineering system** and **runtime system (RS)** ...

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1 [Draft report on requirements for a common prototyping system](#)

R. P. Gabriel

 March 1989 **ACM SIGPLAN Notices**, Volume 24 Issue 3

**Publisher:** ACM Press

 Full text available: [pdf\(4.76 MB\)](#) Additional Information: [full citation](#), [citations](#), [index terms](#)


2 [An asynchronous integration and event detection algorithm for simulating multi-agent hybrid systems](#)

Joel M. Esposito, Vijay Kumar

 October 2004 **ACM Transactions on Modeling and Computer Simulation (TOMACS)**, Volume 14 Issue 4

**Publisher:** ACM Press

 Full text available: [pdf\(299.01 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)


A simulation algorithm is presented for multi-agent hybrid systems---systems consisting of many sets of nonsmooth differential equations---such as systems involving multiple rigid bodies, vehicles, or airplanes. The differential equations are partitioned into coupled subsystems, called "agents"; and the conditions which trigger the discontinuities in the derivatives, called "events", may depend on the global state vector. Such systems normally require significant computational resources to si ...

**Keywords:** Event detection, hybrid systems, multi-agent systems, numerical integration

3 [Conspectus of software engineering environments](#)

Hans-Ludwig Hausen, Monika Müllerburg

 March 1981 **Proceedings of the 5th international conference on Software engineering ICSE '81**
**Publisher:** IEEE Press

 Full text available: [pdf\(984.97 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)


Aspects of software engineering environments are discussed, namely motivations, life cycle models, concepts, methods, description means and tools. Some general conclusions about these aspects as well as about the area of software engineering environments are drawn. The paper is based on a study of selected software engineering environments.

#### 4 Reusable software components

 **Trudy Levine**  
July 1996 **ACM SIGAda Ada Letters**, Volume XVI Issue 4

**Publisher:** ACM Press

Full text available:  [pdf\(2.45 MB\)](#) Additional Information: [full citation](#), [index terms](#)



#### 5 Intelligent user interfaces for correspondence domains (panel session): moving IUIs

 **off the desktop**

Christopher A. Miller, Christine Mitchell, Patty Lakinsmith, Reiner Onken, Robin Penner, Valerie Shalin

January 2000 **Proceedings of the 5th international conference on Intelligent user interfaces IUI '00**

**Publisher:** ACM Press

Full text available:  [pdf\(718.53 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)



This paper is about the elicitation of the requirements for an intelligent interface for a software test development environment that will accommodate the physically challenged (PC). This research explores the use of eye-tracking mechanisms and digital manipulative user interfaces that are especially enhanced for the PC. In addition these devices provide assistance for the knowledge elicitation phase for an Intelligent User Interface to such an environment. It was never a stated objective o ...

#### 6 The role of debugging within software engineering environments

 **Monika A. F. Müllerburg**  
March 1983 **ACM SIGSOFT Software Engineering Notes , ACM SIGPLAN Notices , Proceedings of the symposium on High-level debugging SIGSOFT '83**, Volume 8 , 18 Issue 4 , 8

**Publisher:** ACM Press

Full text available:  [pdf\(783.98 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)



Programming environments (PEs) support a single programmer developing small- to medium-scale programs, whereas software development support systems and software engineering environments (SE<sup>2</sup>s) support whole project teams, developing Large-scale software. There is no reason to believe that one and only one support system may exist. The usefulness of one or the other depends on the particular situation of software development. Debugging is distinguished from testing and defined not only ...

**Keywords:** Static debugging, dynamic debugging, programming environment, software development support system, software engineering environment, static analysis, testing, validation

#### 7 Object oriented analysis transformation in Ada for real-time systems with resource constraints

 **Jonathan Preston, Steve Hufnagel**  
June 1993 **Proceedings of the tenth annual Washington Ada symposium on Ada: Ada's role in software engineering WADAS '93**

**Publisher:** ACM Press

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- 1** [MERLIN: semi-order-independent hierarchical buffered routing tree generation using local neighborhood search](#)

 Amir H. Salek, Jinan Lou, Massoud Pedram  
June 1999 **Proceedings of the 36th ACM/IEEE conference on Design automation DAC '99**

**Publisher:** ACM PressFull text available:  [pdf\(211.75 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

- 2** [Automating parallel simulation using parallel time streams](#)

 Victor Yau  
April 1999 **ACM Transactions on Modeling and Computer Simulation (TOMACS)**, Volume 9 Issue 2

**Publisher:** ACM PressFull text available:  [pdf\(194.69 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper describes a package for parallel steady-state stochastic simulation that was designed to overcome problems caused by long simulation times experienced in our ongoing research in performance evaluation of high-speed and integrated-services communication networks, while maintaining basic statistical rigors of proper analysis of simulation output data. The package, named AKAROA, accepts ordinary (nonparallel) simulation programs, and all further stages of stochastic simulation shou ...

**Keywords:** distributed simulation, interprocess communication, output analysis methodology, parallel processing, parallel simulation, parallel time streams, spectral analysis, speedup

- 3** [Unifying heterogeneous information models](#)

 Narinder Singh  
May 1998 **Communications of the ACM**, Volume 41 Issue 5

**Publisher:** ACM PressFull text available:  [pdf\(336.15 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)

4

◆ A DSM design flow: putting floorplanning, technology-mapping, and gate-placement together 

Amir H. Salek, Jinan Lou, Massoud Pedram

May 1998 **Proceedings of the 35th annual conference on Design automation DAC '98**

**Publisher:** ACM Press

Full text available:  pdf(446.23 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper presents an integrated design flow which combines floorplanning, technology mapping, and placement using a dynamic programming algorithm. The proposed design flow consists of five steps: maximum tree sub-structure formation, levelized cluster tree construction, minimum area implementation using 2-D shape functions, critical path identification, and repeated application of simultaneous floorplanning, technology mapping and gateplacement along the timing critical paths. Experimental results obt ...

5 Requirements interaction management 

◆ **William N. Robinson, Suzanne D. Pawlowski, Vecheslav Volkov**

June 2003 **ACM Computing Surveys (CSUR)**, Volume 35 Issue 2

**Publisher:** ACM Press

Full text available:  pdf(1.24 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Requirements interaction management (RIM) is the set of activities directed toward the discovery, management, and disposition of critical relationships among sets of requirements, which has become a critical area of requirements engineering. This survey looks at the evolution of supporting concepts and their related literature, presents an issues-based framework for reviewing processes and products, and applies the framework in a review of RIM state-of-the-art. Finally, it presents seven research ...

**Keywords:** KAOS, KATE, Oz, Requirements engineering, Telos, WinWin, analysis and design, composite system, deficiency driven design, dependency analysis, distributed intentionality, interaction analysis, software cost reduction (SCR), system architecture, system specification, viewpoints

6 Report from the first annual workshop on software architectures in product line 

◆ acquisitions

Edward A. Addy

May 1998 **ACM SIGSOFT Software Engineering Notes**, Volume 23 Issue 3

**Publisher:** ACM Press

Full text available:  pdf(977.30 KB)

Additional Information: [full citation](#), [index terms](#)

7 Draft report on requirements for a common prototyping system 

◆ **R. P. Gabriel**

March 1989 **ACM SIGPLAN Notices**, Volume 24 Issue 3

**Publisher:** ACM Press

Full text available:  pdf(4.76 MB)

Additional Information: [full citation](#), [citations](#), [index terms](#)

8 Special issue: AI in engineering 

◆ **D. Sriram, R. Joobani**

April 1985 **ACM SIGART Bulletin**, Issue 92

**Publisher:** ACM Press

Full text available:  pdf(8.79 MB) Additional Information: [full citation](#), [abstract](#)

The papers in this special issue were compiled from responses to the announcement in the July 1984 issue of the SIGART newsletter and notices posted over the ARPAnet. The interest being shown in this area is reflected in the sixty papers received from over six countries. About half the papers were received over the computer network.

**9 Synthesis of application-specific multiprocessor architectures** 

 Shiv Prakash, Alice C. Parker

June 1991 **Proceedings of the 28th conference on ACM/IEEE design automation DAC '91**

**Publisher:** ACM Press

Full text available:  pdf(680.98 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**10 The flexible Ada simulation tool (FAST) and its extensions** 

 Michael L. Samuels, James R. Spiegel

December 1987 **Proceedings of the 19th conference on Winter simulation WSC '87**

**Publisher:** ACM Press

Full text available:  pdf(936.32 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Discrete-event simulation is often considered the method of last resort because of the excessive time needed to develop and debug models, as well as run experiments and analyze results. The Flexible Ada Simulation Tool (FAST), is designed to alleviate these problems through extensive use of Ada design methodology (Ada is a registered trademark of the U.S. Government, Ada Joint Program Office). Object-oriented design permits rapid expansion of language features, including interfaces to data ...

**11 Algorithmic aspects of hardware/software partitioning** 

 Péter Arató, Zoltán Ádám Mann, András Orbán

January 2005 **ACM Transactions on Design Automation of Electronic Systems (TODAES)**, Volume 10 Issue 1

**Publisher:** ACM Press

Full text available:  pdf(253.87 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

One of the most crucial steps in the design of embedded systems is hardware/software partitioning, that is, deciding which components of the system should be implemented in hardware and which ones in software. Most formulations of the hardware/software partitioning problem are NP-hard, so the majority of research efforts on hardware/software partitioning has focused on developing efficient heuristics. This article considers the combinatorial structure behind hardware/software partitioning. Two si ...

**Keywords:** Hardware/software partitioning, graph algorithms, graph bipartitioning, hardware/software codesign, optimization

**12 Frame-based method for customizing generic software architectures** 

 Yu Chye Cheong, Stanislaw Jarzabek

May 1999 **Proceedings of the 1999 symposium on Software reusability SSR '99**

**Publisher:** ACM Press

Full text available:  pdf(1.14 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** domain engineering, frame technology, generic software architectures, reuse, system families

13 [A comparison of automatic parallelization tools/compilers on the SGI origin 2000](#) 

Michael Frumkin, Michelle Hribar, Haoqiang Jin, Abdul Waheed, Jerry Yan

November 1998 **Proceedings of the 1998 ACM/IEEE conference on Supercomputing (CDROM) Supercomputing '98**

**Publisher:** IEEE Computer Society

Full text available:  [html\(87.49 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

Porting applications to new high performance parallel and distributed computing platforms is a challenging task. Since writing parallel code by hand is time consuming and costly, porting codes would ideally be automated by using some parallelization tools and compilers. In this paper, we compare the performance of three parallelization tools and compilers based on the NAS Parallel Benchmark and a CFD application, ARC3D, on the SGI Origin2000 multiprocessor. The tools and compilers compared inclu ...

**Keywords:** CAPTools, HPF, NAS parallel benchmarks, SGI Origin200, automatic parallelization, parallelization tools, parallelizing compilers

14 [Classics in software engineering](#) 

January 1979 Divisible Book

**Publisher:** Yourdon Press

Full text available:  [pdf\(22.45 MB\)](#) Additional Information: [full citation](#), [cited by](#), [index terms](#)

15 [Post-layout timing-driven cell placement using an accurate net length model with movable Steiner points](#) 

Amir H. Ajami, Massoud Pedram

January 2001 **Proceedings of the 2001 conference on Asia South Pacific design automation ASP-DAC '01**

**Publisher:** ACM Press

Full text available:  [pdf\(116.80 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper presents a new algorithm for timing-driven cell placement using the notion of movable Steiner points that capture the net topology. The proposed algorithm improves the timing closure at the backend of the EDA design flow. Unlike conventional flows that perform placement and routing in two separate steps and use rough estimates of the net lengths during placement, our algorithm uses accurate net lengths by considering the net topologies during the Elmore delay calculation step and ...

16 [Module selection for pipelined synthesis](#) 

Rajiv Jain, Alice Parker, Nohbyung Park

June 1988 **Proceedings of the 25th ACM/IEEE conference on Design automation DAC '88**

**Publisher:** IEEE Computer Society Press

Full text available:  [pdf\(622.33 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Module selection is one of the many functions which have to be performed during behavioral synthesis of pipelined designs. Module selection is the process of choosing the types of modules (e.g. carry-look-ahead adder) to implement each operation (e.g. addition). In this paper, we give a limited solution to the module selection problem for

pipelined designs. A model for estimating area-time tradeoffs [3] for pipelined designs is used to formulate the module selection problem, and an overview ...

**17 High level synthesis of pipelined instruction set processors and back-end compilers**

I.-J. Huang, A. M. Despain

July 1992 **Proceedings of the 29th ACM/IEEE conference on Design automation DAC '92**

**Publisher:** IEEE Computer Society Press

Full text available:  [pdf\(758.78 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)



**18 Safe BDD minimization using don't cares**

 Youpyo Hong, Peter A. Beerel, Jerry R. Burch, Kenneth L. McMillan

June 1997 **Proceedings of the 34th annual conference on Design automation DAC '97**

**Publisher:** ACM Press

Full text available:  [pdf\(89.24 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)



In many computer-aided design tools, binary decision diagrams(BDDs) are used to represent Boolean functions. To increase the efficiency and capability of these tools, many algorithms have been developed to reduce the size of BDDs. This paper presents heuristicalgorithms that minimize the size of BDDs representing incompletelyspecified functions by intelligently assigning don't cares to binary values. The traditional algorithm, restrict [Verification of Synchronous Sequential Machines Based on Symbo ...

**19 A simultaneous routing tree construction and fanout optimization algorithm**

 Amir H. Salek, Jinan Lou, Massoud Pedram

November 1998 **Proceedings of the 1998 IEEE/ACM international conference on Computer-aided design ICCAD '98**

**Publisher:** ACM Press

Full text available:  [pdf\(752.11 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)



**20 ABSTRACTS OF INTEREST**

 Susanne M. Humphrey, Ben Shneiderman

July 1993 **ACM SIGCHI Bulletin**, Volume 25 Issue 3

**Publisher:** ACM Press

Full text available:  [pdf\(2.00 MB\)](#) Additional Information: [full citation](#), [abstract](#)



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**21 Concurrent logic restructuring and placement for timing closure**

Jinan Lou, Wei Chen, Massoud Pedram

November 1999 **Proceedings of the 1999 IEEE/ACM international conference on Computer-aided design ICCAD '99**
**Publisher:** IEEE Press

Full text available: [pdf\(124.02 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In this paper, an algorithm for simultaneous logic restructuring and placement is presented. This algorithm first constructs a set of super-cells along the critical paths and then generates the set of non-inferior re-mapping solutions for each supercell. The best mapping and placement solutions for all super-cells are obtained by solving a generalized geometric programming (GGP) problem. The process of identifying and optimizing the critical paths is iterated until timing closure is achieved ...

**22 Delay optimal partitioning targeting low power VLSI circuits**

Hirendu Vaishnav, Massoud Pedram

December 1995 **Proceedings of the 1995 IEEE/ACM international conference on Computer-aided design ICCAD '95**
**Publisher:** IEEE Computer Society

Full text available: [pdf\(301.38 KB\)](#)

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**Abstract:** In this paper, a delay optimal clustering/partitioning algorithm for minimizing the power dissipation of a circuit is proposed. Traditional approaches for delay optimal partitioning are based on Lawler's clustering algorithm that makes no attempt to explore alternative partitioning solutions that have the same delay but better power implementations. Our algorithm provides a formal mechanism which implicitly enumerates alternate partitionings and selects a partitioning that has the same ...

**Keywords:** VLSI, VLSI circuits, circuit CAD, clustering, delay optimal, integrated logic circuits, logic CAD, logic partitioning, partitioning, power dissipation

**23 The role of debugging within software engineering environments**
[Monika A. F. Müllerburg](#)

March 1983 **ACM SIGSOFT Software Engineering Notes , ACM SIGPLAN Notices , Proceedings of the symposium on High-level debugging SIGSOFT '83,**

Volume 8 , 18 Issue 4 , 8

**Publisher:** ACM PressFull text available:  pdf(783.98 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

Programming environments (PEs) support a single programmer developing small- to medium-scale programs, whereas software development support systems and software engineering environments (SE<sup>2</sup>s) support whole project teams, developing Large-scale software. There is no reason to believe that one and only one support system may exist. The usefulness of one or the other depends on the particular situation of software development. Debugging is distinguished from testing and defined not only ...

**Keywords:** Static debugging, dynamic debugging, programming environment, software development support system, software engineering environment, static analysis, testing, validation

**24 Configuration compression for FPGA-based embedded systems**  Andreas Dandalis, Viktor K. PrasannaFebruary 2001 **Proceedings of the 2001 ACM/SIGDA ninth international symposium on Field programmable gate arrays FPGA '01****Publisher:** ACM PressFull text available:  pdf(203.25 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

FPGAs are a promising technology for developing high-performance embedded systems. The density and performance of FPGAs have drastically improved over the past few years. Consequently, the size of the configuration bit-streams has also increased considerably. As a result, the cost-effectiveness of FPGA-based embedded systems is significantly affected by the memory required for storing various FPGA configurations. This paper proposes a novel compression technique that reduces the memory requ ...

**25 Improving the efficiency of power simulators by input vector compaction**  Chi-Ying Tsui, Radu Marculescu, Diana Marculescu, Massoud PedramJune 1996 **Proceedings of the 33rd annual conference on Design automation DAC '96****Publisher:** ACM PressFull text available:  pdf(48.70 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)**26 Frontmatter (TOC, Letter from the chair, Letter from the editor, Letters to the editor,**  **ACM policy and procedures on plagiarism, PASTE abstracts, Calendar of future events, Workshop and conference information)**

ACM SIGSOFT Software Engineering Notes staff

January 2006 **ACM SIGSOFT Software Engineering Notes**, Volume 31 Issue 1**Publisher:** ACM PressFull text available:  pdf(1.82 MB) Additional Information: [full citation](#), [index terms](#)**27 In-network processing: Capturing high-frequency phenomena using a bandwidth-limited sensor network**  Ben Greenstein, Christopher Mar, Alex Pesterev, Shahin Farshchi, Eddie Kohler, Jack Judy, Deborah EstrinOctober 2006 **Proceedings of the 4th international conference on Embedded networked sensor systems SenSys '06****Publisher:** ACM Press

Full text available:  pdf(853.96 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Small-form-factor, low-power wireless sensors-motes-are convenient to deploy, but lack the bandwidth to capture and transmit raw high-frequency data, such as human voices or neural signals, in real time. Local filtering can help, but we show that the right filter settings depend on changing ambient conditions and network effects such as congestion, which makes them dynamic and unpredictable. Mote collection systems for high-frequency data must support iteratively-tuned, deployment-specific filte ...

**Keywords:** acoustics, health monitoring, motes, sensor networks, signal processing frameworks

## 28 Reusable software components

 Trudy Levine  
July 1996 **ACM SIGAda Ada Letters**, Volume XVI Issue 4

**Publisher:** ACM Press

Full text available:  pdf(2.45 MB) Additional Information: [full citation](#), [index terms](#)



## 29 Dissertations: ABSTRACTS OF INTEREST

 Susanne M. Humphrey, Ben Shneiderman  
April 1993 **ACM SIGCHI Bulletin**, Volume 25 Issue 2

**Publisher:** ACM Press

Full text available:  pdf(1.11 MB) Additional Information: [full citation](#), [abstract](#)

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## 30 OOPSLA practitioner reports chair's welcome: OO techniques applied to a real-time, embedded, spaceborne application

 Alexander T. Murray, Mohammad Shahabuddin  
October 2006 **Companion to the 21st ACM SIGPLAN conference on Object-oriented programming systems, languages, and applications OOPSLA '06**

**Publisher:** ACM Press

Full text available:  pdf(510.33 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

Though Object-Oriented Analysis, Design, and languages have become the dominant practices in many, or most, domains of software engineering, concerns about complexity, size, and performance in the embedded, real-time software domain have led to a prevalent view that OO technology is not suitable for the domain. We challenge this view through a successful application of OOA, OOD, and C++ (including STL) in the embedded, real-time flight software in an Earth-orbiting science instrument named Aquar ...

**Keywords:** C++, embedded, object-oriented analysis, object-oriented design, real-time, unified modeling language, use case



## 31 Information retrieval 1: Categorizing web search results into meaningful and stable categories using fast-feature techniques

 Bill Kules, Jack Kustanowitz, Ben Shneiderman

**June 2006 Proceedings of the 6th ACM/IEEE-CS joint conference on Digital libraries****JCDL '06****Publisher:** ACM PressFull text available:  pdf(460.86 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

When search results against digital libraries and web resources have limited metadata, augmenting them with meaningful and stable category information can enable better overviews and support user exploration. This paper proposes six fast-feature techniques that use only features available in the search result list, such as title, snippet, and URL, to categorize results into meaningful categories. They use credible knowledge resources, including a US government organizational hierarchy, a themati ...

**Keywords:** browsing, categorization, classification, metadata, open directory, taxonomies

**32 Software engineering for security: a roadmap**

◆ Premkumar T. Devanbu, Stuart Stubblebine

May 2000 **Proceedings of the Conference on The Future of Software Engineering ICSE '00****Publisher:** ACM PressFull text available:  pdf(1.71 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** copy protection, security, software engineering, water-marking

**33 An asynchronous integration and event detection algorithm for simulating multi-agent****hybrid systems**

◆ Joel M. Esposito, Vijay Kumar

October 2004 **ACM Transactions on Modeling and Computer Simulation (TOMACS)**,  
Volume 14 Issue 4**Publisher:** ACM PressFull text available:  pdf(299.01 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

A simulation algorithm is presented for multi-agent hybrid systems---systems consisting of many sets of nonsmooth differential equations---such as systems involving multiple rigid bodies, vehicles, or airplanes. The differential equations are partitioned into coupled subsystems, called "agents"; and the conditions which trigger the discontinuities in the derivatives, called "events", may depend on the global state vector. Such systems normally require significant computational resources to si ...

**Keywords:** Event detection, hybrid systems, multi-agent systems, numerical integration

**34 AUTOSPEC: Automatic Motor Specification System**

◆ Charles A. Suscheck, Gregory J. Komar

December 1992 **ACM SIGPLAN OOPS Messenger , Addendum to the proceedings on Object-oriented programming systems, languages, and applications (Addendum) OOPSLA '92**, Volume 4 Issue 2**Publisher:** ACM PressFull text available:  pdf(401.58 KB) Additional Information: [full citation](#), [abstract](#), [index terms](#)

The AUTOSPEC system is an automatic motor specification software system that primarily serves to non-interactively produce bill of materials from sales orders. At the core, the system applies Expert System and coordinated Relational Database technology to effect an object-oriented implementation. Computer Aided Software Engineering (CASE) tools

supporting object-oriented analysis (OOA) and an object-oriented design (OOD) approach were used to provide a smooth transition of the software desi ...

**35 Conspectus of software engineering environments**

Hans-Ludwig Hausen, Monika Müllerburg

March 1981 **Proceedings of the 5th international conference on Software engineering ICSE '81**

**Publisher:** IEEE Press

Full text available:  pdf(984.97 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Aspects of software engineering environments are discussed, namely motivations, life cycle models, concepts, methods, description means and tools. Some general conclusions about these aspects as well as about the area of software engineering environments are drawn. The paper is based on a study of selected software engineering environments.

**36 Language assessment criteria for discrete simulation**

 James W. Hooper

December 1986 **Proceedings of the 18th conference on Winter simulation WSC '86**

**Publisher:** ACM Press

Full text available:  pdf(583.05 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Criteria are suggested for use in conducting comparative assessments of languages for use in discrete simulation. The criteria are grouped within the categories of simulation-specific criteria and general criteria. A discussion is provided concerning the significance the various assessment criteria have in modeling and simulation. Suggestions are offered concerning the use of the criteria in a language selection process.

**37 Future of simulation: Simulation in the international IMS MISSION project: the IMS MISSION architecture for distributed manufacturing simulation**

Charles McLean, Frank Riddick

December 2000 **Proceedings of the 32nd conference on Winter simulation WSC '00**

**Publisher:** Society for Computer Simulation International

Full text available:  pdf(269.47 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

This paper presents an overview of a neutral reference architecture for integrating distributed manufacturing simulation systems with each other, with other manufacturing software applications, and with manufacturing data repositories. Other manufacturing software applications include, but are not limited to systems used to: 1) design products, 2) specify processes, 3) engineer manufacturing systems, and 4) manage production. The architecture identifies the software building blocks and interface ...

**38 The C++ interface in objectivity**

 Rakesh Agarwal

December 1994 **ACM SIGPLAN Notices**, Volume 29 Issue 12

**Publisher:** ACM Press

Full text available:  pdf(1.07 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Computerized databases are essential and inseparable components of a vast majority of today's information systems. Database systems are used at all levels of management, research and production to provide uniform access and control of consistent information. Computer aided software engineering system require extensive database system support. Several industrial and academic research and development projects attempt to provide this support by using conventional database management systems or spec ...

**Keywords:** inheritance, object-oriented database system, object-oriented programming,

persistence

- 39 [Floorplanning and partitioning: PMP: performance-driven multilevel partitioning by aggregating the preferred signal directions of I/O conduits](#)

 Chanseok Hwang, Massoud Pedram  
January 2005 **Proceedings of the 2005 conference on Asia South Pacific design automation ASP-DAC '05**

**Publisher:** ACM Press

Full text available:  [pdf\(340.18 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

In this paper, we present a new performance-driven multilevel partitioning algorithm, which calculates the timing gain of a move in the move-based partitioning strategies based on the aggregation of preferred signal directions. In addition, we propose a new timing-aware multilevel clustering algorithm that uses the connection strength of an edge as the primary objective, and the maximum depth or the maximum hop-count of any path containing the edge as a tiebreaker for the clustering step. These ...

- 40 [Object oriented analysis transformation in Ada for real-time systems with resource constraints](#)

 Jonathan Preston, Steve Hufnagel  
June 1993 **Proceedings of the tenth annual Washington Ada symposium on Ada: Ada's role in software engineering WADAS '93**

**Publisher:** ACM Press

Full text available:  [pdf\(636.01 KB\)](#) Additional Information: [full citation](#), [references](#)

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**41 Exploiting style in architectural design environments**

David Garlan, Robert Allen, John Ockerbloom

 December 1994 **ACM SIGSOFT Software Engineering Notes**, Proceedings of the 2nd ACM SIGSOFT symposium on Foundations of software engineering **SIGSOFT '94**, Volume 19 Issue 5

Publisher: ACM Press

Full text available: [pdf\(1.42 MB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

As the design of software architectures emerges as a discipline within software engineering, it will become increasingly important to support architectural description and analysis with tools and environments. In this paper we describe a system for developing architectural design environments that exploit architectural styles to guide software architects in producing specific systems. The primary contributions of this research are: (a) a generic object model for representing architectural design ...

**42 Representing the hardware design process by a common data schema**

Maria Briemann, Elisabeth Kupitz

 November 1992 **Proceedings of the conference on European design automation EUROC-DAC '92**

Publisher: IEEE Computer Society Press

Full text available: [pdf\(692.23 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)**43 Manufacturing applications: simulation and control: Emulation with DSOL**

Peter H. M. Jacobs, Alexander Verbraeck, William Rengelink

 December 2005 **Proceedings of the 37th conference on Winter simulation WSC '05**

Publisher: Winter Simulation Conference

Full text available: [pdf\(484.32 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

Manufacturing control systems are extremely hard to design and test. Testing Programmable Logic Controller (PLC) software in an on-line manufacturing setting can be costly, dangerous, and inefficient. The availability of a seamless transition between the real manufacturing process and a simulated manufacturing process on the one hand, and a real PLC and a soft PLC on the other hand might help to solve these problems. Using the Java-based object oriented simulation library DSOL (Distributed Simul ...

**44 Information survivability control systems**

Kevin Sullivan, John C. Knight, Xing Du, Steve Geist

May 1999 **Proceedings of the 21st international conference on Software engineering. ICSE '99**

**Publisher:** IEEE Computer Society Press

Full text available:  [pdf\(1.23 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** architecture economics, control, infrastructure survivability

**45 Session 10D: management of computation: Intelligent agents for QoS management**

 Krunoslav Trzec, Darko Huljenic

July 2002 **Proceedings of the first international joint conference on Autonomous agents and multiagent systems: part 3 AAMAS '02**

**Publisher:** ACM Press

Full text available:  [pdf\(281.59 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper addresses the structural and behavioral characteristics of multi-agent system (MAS) for Quality of Service (QoS) management using MESSAGE (Methodology for Engineering Systems of Software Agents) modeling language that extends UML (Unified Modeling Language) by contributing agent knowledge level concepts and diagrams with notation for viewing them. Such a multi-agent system is an environment composed of Intelligent Agents (IAs) that ensure guaranteed QoS offered by multi-service commun ...

**Keywords:** MESSAGE/UML, QoS management, intelligent agents

**46 Statistical sampling and regression analysis for RT-level power evaluation**

Cheng-Ta Hsieh, Qing Wu, Chih-Shun Ding, Massoud Pedram

January 1997 **Proceedings of the 1996 IEEE/ACM international conference on Computer-aided design ICCAD '96**

**Publisher:** IEEE Computer Society

Full text available:  [pdf\(274.55 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

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In this paper, we propose a statistical power evaluation framework at the RT-level. We first discuss the power macro-modeling formulation, and then propose a simple random sampling technique to alleviate the overhead of macro-modeling during RTL simulation. Next, we describe a regression estimator to reduce the error of the macro-modeling approach. Experimental results indicate that the execution time of the simple random sampling combined with power macro-modeling is 50 X lower than that of ...

**Keywords:** RT-Level power evaluation, RTL simulation, power macro-modeling formulation, random sampling, regression analysis, regression estimator, statistical analysis, statistical sampling

**47 Product lines & processes: Five years of product line engineering in a small company**

 Martin Verlage, Thomas Kiesgen

May 2005 **Proceedings of the 27th international conference on Software engineering ICSE '05 , Proceedings of the 27th international conference on Software engineering ICSE '05**

**Publisher:** ACM Press, IEEE Computer Society

Full text available:  [pdf\(328.48 KB\)](#)



Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In 1999, a new team at MARKET MAKER Software AG began to develop a software product line for managing and displaying stock market data and financial market news. The basic idea was to use web technology in all applications for delivering services to customers. It soon turned out that the company had to change both the processes and the organization. This report summarizes the changes made and the lessons learned over the past five years, when the product line idea was introduced into a small com ...

**Keywords:** SME, experience report, product line engineering, project management

**48** Workshop and conference summaries: Practitioners do good work 



L. B. S. Raccoon

March 2002 **ACM SIGSOFT Software Engineering Notes**, Volume 27 Issue 2

**Publisher:** ACM Press

Full text available:  [pdf\(808.46 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

I believe that software engineers have done, are doing, and will continue to do good work. Practitioners contribute to the well-being of society and add value to the economy. Working applications enable hundreds of millions of users around the world to productively do things that would otherwise be impossible. I do not claim that software engineers are perfect. Bugs seem to lurk in almost all programs. Reliable schedules and budgets remain elusive. And, software has created whole new slates of pr ...

**49** Intelligent user interfaces 



William E. Hefley, Dianne Murray

February 1993 **Proceedings of the 1st international conference on Intelligent user interfaces IUI '93**

**Publisher:** ACM Press

Full text available:  [pdf\(777.77 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** adaptive intelligent interface systems, intelligent interfaces, intelligent user interfaces, user interface management systems, user models

**50** Intelligent user interfaces for correspondence domains (panel session): moving IUIs off the desktop 



Christopher A. Miller, Christine Mitchell, Patty Lakinsmith, Reiner Onken, Robin Penner, Valerie Shalin

January 2000 **Proceedings of the 5th international conference on Intelligent user interfaces IUI '00**

**Publisher:** ACM Press

Full text available:  [pdf\(718.53 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper is about the elicitation of the requirements for an intelligent interface for a software test development environment that will accommodate the physically challenged (PC). This research explores the use of eye-tracking mechanisms and digital manipulative user interfaces that are especially enhanced for the PC. In addition these devices provide assistance for the knowledge elicitation phase for an Intelligent User Interface to such an environment. It was never a stated objective o ...

**51**

An efficient overloaded implementation of forward mode automatic differentiation in MATLAB 

 Shaun A. Forth

June 2006 **ACM Transactions on Mathematical Software (TOMS)**, Volume 32 Issue 2

**Publisher:** ACM Press

Full text available:  pdf(449.10 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The Mad package described here facilitates the evaluation of first derivatives of multidimensional functions that are defined by computer codes written in MATLAB. The underlying algorithm is the well-known forward mode of automatic differentiation implemented via operator overloading on variables of the class fmad. The main distinguishing feature of this MATLAB implementation is the separation of the linear combination of derivative vectors into a separate derivative vector class derivvec. This ...

**Keywords:** MATLAB, efficient computation of Jacobians

- 52 Use of an environment classification model 

Marvin V. Zelkowitz

May 1993 **Proceedings of the 15th international conference on Software Engineering ICSE '93**

**Publisher:** IEEE Computer Society Press

Full text available:  pdf(913.23 KB) Additional Information: [full citation](#), [references](#), [citations](#)

**Keywords:** environment frameworks, environment mappings, integrated environments, reference models

- 53 TPASS: dynamic, discrete-event simulation and animation of a Toll Plaza 

 Robert T. Redding, Andrew J. Junga

December 1992 **Proceedings of the 24th conference on Winter simulation WSC '92**

**Publisher:** ACM Press

Full text available:  pdf(374.41 KB) Additional Information: [full citation](#), [references](#), [index terms](#)

- 54 Military applications: military acquisition and employment modeling: An approach to design and development of decentralized data fusion simulator 

Chandresh Mehta, Govindarajan Srimathveeravalli, Thenkurussi Kesavadas

December 2005 **Proceedings of the 37th conference on Winter simulation WSC '05**

**Publisher:** Winter Simulation Conference

Full text available:  pdf(547.24 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

This paper discusses the ongoing efforts on development of a *Decentralized Data Fusion (DDF)* simulator for analysis and design of a distributed fusion-based tracking system. We have identified the requirements for a DDF simulator and have developed a fully interactive, graphical user interface based scenario generation tool called *SceneGen* (Srimathveeravalli, Subramanian and Kesavadas 2004) for creating battlefield scenarios, and a simulation tool called *VizSim* for running v ...

- 55 Virtual reality/3D visualization: animation, simulation, and navigation: A scenario generation tool for DDF simulation testbeds 

G. Srimathveeravalli, N. Subramanian, T. Kesavadas

December 2004 **Proceedings of the 36th conference on Winter simulation WSC '04**

**Publisher:** Winter Simulation Conference

Full text available:  pdf(481.59 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

An interactive tool has been developed for visualizing and creating scaled battlefield based scenarios for use in a simulation testbed to develop and test distributed data fusion and ad-hoc networking algorithms. This paper discusses the design requirements and implementation issues for developing such a tool. Two main design goals were to enable design of complex scenarios in an intuitive and easy fashion, and provide a complete set of decision support utilities. The tool, called SceneGen ...

**56** Process and products for software reuse in Ada 

 Sholom Cohen

December 1990 **Proceedings of the conference on TRI-ADA '90 TRI-Ada '90**

**Publisher:** ACM Press

Full text available:  pdf(1.14 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

The large scale application of reuse to support software development is not a new concept. Over twenty years ago, M. D. McIlroy expressed the need for: "... standard catalogues of routines, classified by precision, robustness, time-space performance, size limits, and binding time of parameters." [McIlroy 68] He also provided insight that is still valid into: "... the kinds of variability necessary in software components, ways of producing useful inventories, type ...

**57** Architectural mismatch or why it's hard to build systems out of existing parts 

 David Garlan, Robert Allen, John Ockerbloom

April 1995 **Proceedings of the 17th international conference on Software engineering ICSE '95**

**Publisher:** ACM Press

Full text available:  pdf(835.08 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**58** Minimal area merger of finite state machine controllers 

Debaditya Mukherjee, Massoud Pedram, Melvin Breuer

November 1992 **Proceedings of the conference on European design automation EURO-DAC '92**

**Publisher:** IEEE Computer Society Press

Full text available:  pdf(769.67 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**59** Issue abstracts 

 ACM SIGMICRO Newsletter staff

September 1991 **ACM SIGMICRO Newsletter**, Volume 22 Issue 2

**Publisher:** ACM Press

Full text available:  pdf(688.05 KB) Additional Information: [full citation](#)

**60** KQML as an agent communication language 

 Tim Finin, Richard Fritzson, Don McKay, Robin McEntire

November 1994 **Proceedings of the third international conference on Information and knowledge management CIKM '94**

**Publisher:** ACM Press

Full text available:  pdf(1.04 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper describes the design of and experimentation with the Knowledge Query and Manipulation Language (KQML), a new language and protocol for exchanging information

and knowledge. This work is part of a larger effort, the ARPA Knowledge Sharing Effort which is aimed at developing techniques and methodology for building large-scale knowledge bases which are sharable and reusable. KQML is both a message format and a message-handling protocol to support run-time knowledge sharing among age ...

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**1. SIMOO-RT-an object-oriented framework for the development of real-time industrial automation**  
Becker, L.B.; Pereira, C.E.;  
*Robotics and Automation, IEEE Transactions on*  
Volume 18, Issue 4, Aug. 2002 Page(s):421 - 430  
Digital Object Identifier 10.1109/TRA.2002.802933

[AbstractPlus](#) | [References](#) | [Full Text: PDF\(779 KB\)](#) [IEEE JNL](#)  
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**2. Efficient and Scalable Compiler-Directed Energy Optimization for Realtime Applications**

Huang, Po-Kuan; Ghiasi, Soheil;  
*Design, Automation & Test in Europe Conference & Exhibition, 2007, DATE '07*  
April 2007 Page(s):1 - 6  
Digital Object Identifier 10.1109/DAT.2007.364386

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**3. Two-Level Microprocessor-Accelerator Partitioning**

Sirowy, Scott; Wu, Yonghui; Lonardi, Stefano; Vahid, Frank;  
*Design, Automation & Test in Europe Conference & Exhibition, 2007, DATE '07*  
April 2007 Page(s):1 - 6  
Digital Object Identifier 10.1109/DAT.2007.364610

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**4. Soft-core Processor Customization using the Design of Experiments Paradigm**

Sheldon, David; Vahid, Frank; Lonardi, Stefano;  
*Design, Automation & Test in Europe Conference & Exhibition, 2007, DATE '07*  
April 2007 Page(s):1 - 6  
Digital Object Identifier 10.1109/DAT.2007.364392

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**5. Towards an Approach for the Verification of Downtimeless System Evolution**

Sunder, Christoph; Favre-Bulle, Bernard; Vyatkin, Valeriy;  
*Emerging Technologies and Factory Automation, 2006, ETFA '06, IEEE Conference on*  
Sept. 2006 Page(s):1133 - 1136  
Digital Object Identifier 10.1109/ETFA.2006.355229

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6. **An Architecture for Runtime State Restoration after Transient Hardware-Faults in Redundant Skambraks, Martin; Emerging Technologies and Factory Automation 2006, ETFA '06, IEEE Conference on Sept. 2006 Page(s):78 - 85 Digital Object Identifier 10.1109/ETFA.2006.355368**  
[AbstractPlus](#) | Full Text: [PDF\(206 KB\)](#) [IEEE Xplore](#)  
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7. **Program Phase Directed Dynamic Cache Way Reconfiguration for Power Efficiency** Banerjee, Subhasis; G, Surendra; Nandy, S. K.; Design Automation Conference, 2007, ASP-DAC '07, Asia and South Pacific Jan. 2007 Page(s):884 - 889 Digital Object Identifier 10.1109/ASPDAC.2007.358101  
[AbstractPlus](#) | Full Text: [PDF\(329 KB\)](#) [IEEE Xplore](#)  
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8. **Fault Dictionary Size Reduction for Million-Gate Large Circuits** Hong, Yu-Ru; Huang, Juinn-Dar; Design Automation Conference, 2007, ASP-DAC '07, Asia and South Pacific Jan. 2007 Page(s):829 - 834 Digital Object Identifier 10.1109/ASPDAC.2007.358092  
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Okada, K.; Ogura, T.; Haneda, A.; Fujimoto, J.; Gravot, F.; Inaba, M.;  
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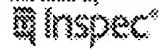
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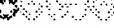
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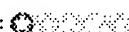
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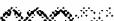
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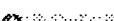
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1979-09-01

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Eng

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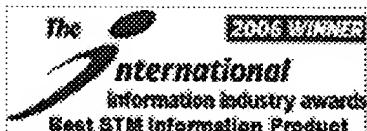
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**Content Types** **Subject Collections**

English

**All Searchable Item Types**REMOVE Search For (All words) > Did you mean  
'engineering automation "run time"' rather  
than 'engineering automation runtime'?

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engineering automation runti

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**3 Results**

- Access to all content  
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<input type="checkbox"/>	1. Book Chapter	Add to marked items
	Periodot: Towards Automated Runtime Detection of Performance Bottlenecks	
	DOI	10.1007/3-540- 28555-5_17
	Book	High Performance Computing in Science and Engineering, Garching 2004
	Part	Part II
	Authors	Karl Fürlinger and Michael Gerndt
	Subject Collection	Mathematics and Statistics
	Abstract	...of a system for the automation of the performance analysis process...detect performance problems automatically at runtime and in a distributed fashion...
	Text	PDF (479 kb)
<input type="checkbox"/>	2. Book Chapter	Add to marked items
	A Lightweight Dynamic Application Monitor for SMP Clusters	

**Subject**

Computer Science (1)

Computer Communication  
Networks (1)Artificial Intelligence (incl.  
Robotics) (1)

Software Engineering (1)

Database Management (1)

Data Encryption (1)

Algorithm Analysis and Pro  
Complexity (1)Computation by Abstract D  
(1)**Copyright**

2005 (2)

2003 (1)

**Publication**High Performance Computi  
Science and Engineering,  
Garching 2004 (1)High Performance Computi  
Science and Engineering, N  
2004 (1)Lecture Notes in Computer  
Science (1)**Author**

Karl Fürlinger

Michael Gerndt

DOI	10.1007/3-540-26657-7_2
Book	High Performance Computing in Science and Engineering, Munich 2004
Part	Part I
Authors	Karl Fürlinger and Michael Gerndt
Subject Collection	Mathematics and Statistics
Abstract	...distribution, on-line processing and automation. In this paper we present...and an active component called runtime information producer (RIP) which provides...
Text	PDF (186 kb)
<hr/>	
3.  Book Chapter	Add to marked items
Towards a Knowledge-Based Approach to Semantic Service Composition	
Category	Semantic Web Services
Book Series	Lecture Notes in Computer Science
Volume	Volume 2870/2003
Book	The SemanticWeb - ISWC 2003
Authors	Liming Chen, Nigel R. Shadbolt, Carole Goble, Feng Tao, Simon J. Cox, Colin Puleston and P.R. Smart
Subject Collection	Computer Science
Abstract	...ontological and knowledge engineering initiatives. In this...that

supports the  
runtime  
recommendation  
of a...basis for  
full automation  
of service  
composition...

Text

PDF (320  
kb) HTML

---

3 Results

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**Content Types Subject Collections****All Search Results**REMOVE Search For (All words) > Did you mean 'engineering  
system "run time"' rather than 'engineering system runtime'?

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**Expanded View****Condensed View**43 Results First | **1-10** | 11-20 | 21-30 | 31-40 | 41-43 | Next
 Access to all content
  Access to some content
   
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<input checked="" type="checkbox"/>	1.	Book Chapter Engineering large parallel functional programs	Add to marked items	Content St...
		DOI	10.1007/BFb0055431	Online First
		Book Series	Lecture Notes in Computer Science	In Publicatio...
		Volume	Volume 1467/1998	SpringerLink
		Book	Implementation of Functional Languages	In the last n...
		Authors	Hans-Wolfgang Loidl and Phil Trinder	In the last s...
		Subject Collection	Computer Science	In the last y...
		Abstract	...of an integrated engineering environment. In the process we have refined components of this environment like the simulator, the runtime system, and the profiling...	Content Ty...
		Text	PDF (1,263 kb)	Book Chapter

<input checked="" type="checkbox"/>	2.	Book Chapter Engineering Runtime Requirements-Monitoring Systems Using MDA Technologies	Add to marked items	Content St...
		DOI	10.1007/11580850_17	Computer C...
		Book Series	Lecture Notes in Computer Science	Networks (2)
		Volume	Volume 3705/2005	Data Encryp...
		Book	Trustworthy Global Computing	Algorithm A...
		Authors	James Skene and Wolfgang Emmerich	Computatio...
		Subject Collection	Computer Science	Software E...
		Abstract	...can be used to implement runtime requirements monitoring of systems by modelling the required behaviour...	Operating S...

Find

engineering s  
(Within all o...

Starts With

a b c d e f  
p q r s t u

	Text	PDF (265 kb)	2000 - 2009
3.	Journal Article Investigating Autonomic Runtime Management Strategies for SAMR Applications	Add to marked items	1990 - 1999
	DOI	10.1007/s10766-005-3589-z	Publication
	Journal	International Journal of Parallel Programming	Lecture Note Science (25)
	Issue	Volume 33, Numbers 2-3 / June, 2005	Automated S (5)
	Authors	Sumir Chandra, Manish Parashar, Jingmei Yang, Yeliang Zhang and Salim Hariri	Multiagent E
	Subject Collection	Computer Science	Real-Time S
	Abstract	...realistic scientific and engineering simulations of complex...paper presents application/system sensitive reactive and...the GridARM autonomic runtime management framework. An...	High Perform Science and Garching 20
	Text	PDF (270 kb)	High Perform Science and 2004 (1)
	Rightslink	Request Permissions	Requirements
4.	Journal Article Runtime vs. Manual Data Distribution for Architecture-Agnostic Shared-Memory Programming Models	Add to marked items	The VLDB Jc International Large Data I
	DOI	10.1023/A:1019899812171	Annals of Ma Artificial Inte
	Journal	International Journal of Parallel Programming	Author
	Issue	Volume 30, Number 4 / August, 2002	Karl Fürlinger
	Authors	Dimitrios S. Nikolopoulos, Eduard Ayguadé and Constantine D. Polychronopoulos	Michael Geri
	Subject Collection	Computer Science	Phil Trinder
	Abstract	...in the operating system, runtime algorithms based on...but require careful engineering and tuned implementations...	Manish Para
	Text	PDF (507 kb)	Klaus Haveli
	Rightslink	Request Permissions	Salim Hariri
5.	Book Chapter Using Architectural Models at Runtime : Research Challenges	Add to marked items	Jingmei Yan
	Category	Position Papers	Yeliang Zhai
			Sumir Chandra
			Hans-Wolfgang

	Book Series	Lecture Notes in Computer Science
	Volume	Volume 3047/2004
	Book	Software Architecture
	Authors	David Garlan and Bradley Schmerl
	Subject Collection	Computer Science
	Abstract	...software engineering is the development of a well-defined software architectural model. Such a model describes the runtime manifestation of a software system in...
	Text	PDF (159 kb)
6.	Book Chapter	Add to marked items
	Automatic parallelization of the AVL FIRE benchmark for a distributed-memory system	
	DOI	10.1007/3-540-60902-4_7
	Book Series	Lecture Notes in Computer Science
	Volume	Volume 1041/1996
	Book	Applied Parallel Computing Computations in Physics, Chemistry and Engineering Science
	Authors	Peter Brezany, Viera Sipkova, Barbara Chapman and Robert Greimel
	Subject Collection	Computer Science
	Abstract	...aerospace and automotive engineering, often require enormous...dependent on some runtime data, therefore runtime...Vienna Fortran Compilation System. We have examined...
	Text	PDF (579 kb)
7.	Book Chapter	Add to marked items
	Optimizing Content Management System Pipelines Separation and Merging of Concerns	
	Book Series	Lecture Notes in Computer Science
	Volume	Volume 2487/2002
	Book	Generative Programming and Component Engineering : ACM SIGPLAN/SIGSOFT Conference, GPCE 2002, Pittsburgh, PA, USA, October 6-8, 2002. Proceedings
	Authors	Markus Noga and Florian

		Krüper
	Subject Collection	Computer Science
	Abstract	Content management systems support the dissemination...documents. In software engineering terms, they separate...document deployment. Their runtime processing pipeline is...
	Text	PDF (193 kb)
8.	Book Chapter Instrumentation of Synchronous Reactive Systems for Performance Analysis: A Case Study	<a href="#">Add to marked items</a>
	Book Series	Lecture Notes in Computer Science
	Volume	Volume 1469/1998
	Book	Computer Performance Evaluation: 10th International Conference, Tools'98, Palma de Mallorca, Spain, September 1998. Proceedings
	Authors	Alberto Valderrutén, Javier Mosquera and Víctor M. Gólfas
	Subject Collection	Computer Science
	Abstract	...a multithreaded runtime system for a distributed functional programming language. Performance metrics are computed and validated with experimental results. Keywords: Performance Engineering, Synchronous Reactive...
	Text	PDF (214 kb)
9.	Book Chapter A Model for Developing Component-Based and Aspect-Oriented Systems	<a href="#">Add to marked items</a>
	DOI	10.1007/11821946_17
	Book Series	Lecture Notes in Computer Science
	Volume	Volume 4089/2006
	Book	Software Composition
	Authors	Nicolas Pessemier, Lionel Seinturier, Thierry Coupaye and Laurence Duchien
	Subject Collection	Computer Science
	Abstract	...Component- Based Software Engineering

(CBSE) offer  
solutions...decomposes a  
software system into regular  
components...as first-class  
runtime entities. This  
clarifies...

Text	PDF (1,973 kb)
10. <b>Journal Article</b> An Approach for Recovering Distributed System Architectures	<a href="#">Add to marked items</a>
DOI	<a href="#">10.1023/A:1011217720860</a>
Journal	Automated Software Engineering
Issue	Volume 8, Numbers 3-4 / August, 2001
Authors	Nabor C. Mendonça and Jeff Kramer
Subject Collection	Computer Science
Abstract	... runtime abstractions (clients, servers, interaction protocols, etc.) that are typical to the design of distributed software systems. This paper presents an exploratory reverse engineering ...
Text	<a href="#">PDF (6 kb)</a>
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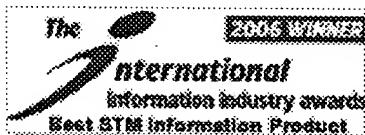
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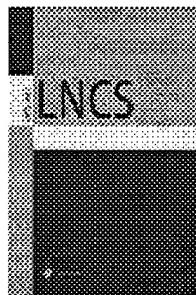
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**FST TCS 2000: Foundations of Software  
Technology and Theoretical Computer  
Science: 20th Conference, New Delhi, India,  
December 2000. Proceedings**

Book Series **Lecture Notes in Computer Science**  
Publisher **Springer Berlin / Heidelberg**  
ISSN **0302-9743 (Print) 1611-3349  
(Online)**  
Volume **Volume 1974/2000**  
Copyright **2000**  
Subject Collection **Computer Science**  
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**Editorial View**

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Condensed List View



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42 Chapters

First | **1-10** | 11-20 | 21-30 | 31-40 | 41-42 | Next

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Text **PDF (144 kb)**

**Model Checking: Theory into Practice**

1

Author **E. Allen Emerson**  
Subject Collection **Computer Science**  
Text **PDF (150 kb)**

At

**An Algebra for XML Query**

11

Jo

Authors **Mary Fernandez, Jerome Simeon and  
Philip Wadler**  
Subject Collection **Computer Science**  
Text **PDF (259 kb)**

**Irregularities of Distribution, Derandomization,  
and Complexity Theory**

46

Author **Bernard Chazelle**  
Subject Collection **Computer Science**  
Text **PDF (167 kb)**

**Rewriting Logic as a Metalogical Framework**

55

Authors **David Basin, Manuel Clavel and José  
Meseguer**  
Subject Collection **Computer Science**  
Text **PDF (323 kb)**

**Frequency Assignment in Mobile Phone**

81

Systems		
Author	Martin Grötschel	
Subject Collection	Computer Science	
Text	PDF (57 kb)	
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Authors	Peter Buneman, Sanjeev Khanna and Wang-Chiew Tan	
Subject Collection	Computer Science	
Text	PDF (116 kb)	
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Authors	Sachin B. Patkar and H. Narayanan	
Subject Collection	Computer Science	
Text	PDF (192 kb)	
■ On-Line Edge-Coloring with a Fixed Number of Colors		106
Authors	Lene Monrad Favrholdt and Morten Nyhave Nielsen	
Subject Collection	Computer Science	
Text	PDF (189 kb)	
■ On Approximability of the Independent/Connected Edge Dominating Set Problems		117
Author	Toshihiro Fujito	
Subject Collection	Computer Science	
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Subject Collection	Computer Science	
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## Web Search Results for "engineering system automation runtime"

Now Searching: **Google** [Yahoo! Search](#) [Live Search](#) [Ask](#) [And More...](#)

1 - 20 of 72 from All Search Engines [\(about Results\)](#)

1. **[Systems engineering](#)**  
Boeing has jobs available in Virginia. Apply online today!  
Sponsored by: [www.boeing.com/careers/](http://www.boeing.com/careers/) [Found on Ads by Google]
2. **[perlos2 - Linux Command - Unix Command](#)**  
Linux / Unix Command Library: perlos2. Learn about its synopsis, description, options, and examples.  
[linux.about.com/library/cmd/blcmd1\\_perlos2.htm](http://linux.about.com/library/cmd/blcmd1_perlos2.htm) [Found on About]
3. **[The Industrial Ethernet Book - Articles: The New Standard for ...](#)**  
PROFINet is a cross-vendor communications, **automation** and **engineering** model, optimized for **automation** systems with distributed intelligence.  
[ethernet.industrial-networking.com/articles/article...](http://ethernet.industrial-networking.com/articles/article...) [Found on Google, Yahoo! Search]
4. **[Automation Software](#)**  
Reliable Automation Software Download Now & Get a Free Trial.  
Sponsored by: [www.AutomationAnywhere.com/](http://www.AutomationAnywhere.com/) [Found on Ads by Google]
5. **[Top 5 Holiday Card Makers](#)**  
Personalize your holiday greetings with these shareware programs.  
[pcworld.about.com/news/Dec112000/636127.htm](http://pcworld.about.com/news/Dec112000/636127.htm) [Found on About]
6. **[Engineering System Expert](#)**  
Systems Control Inc - **engineering** services by Dr. Yehia El-Blbary.  
Sponsored by: [www.systems-control-inc.com](http://www.systems-control-inc.com) [Found on Ads by Yahoo!]
7. **[L-force - the drive and automation system of tomorrow](#)**  
Engineering - from the original idea to full operation. ... L-force drive and automation system can be parameterised and configured with the ...  
[www.l-force.de/en/if02.htm](http://www.l-force.de/en/if02.htm) [Found on Ask.com]
8. **[System for preparing a standard framework for automation appliances patent inventi...](#)**  
... respective appliances by a system-specific adapter, the automation runtime layer. ... used in automation engineering by the development system mapped ...  
[www.freepatentsonline.com/System-for-preparing-a-standa...](http://www.freepatentsonline.com/System-for-preparing-a-standa...) [Found on Yahoo! Search]
9. **[Information System School](#)**  
Search, compare & request info from the top Information system degrees.  
Sponsored by: [AltEngineeringSchools.com](http://AltEngineeringSchools.com) [Found on Ads by Yahoo!]
10. **[System for preparing a standard framework for automation ...](#)**  
They are known to an **engineering** system used for developing control .... by a system-specific adapter, the automation runtime layer (ARL) 3.su  
[www.freepatentsonline.com/20060142882.html](http://www.freepatentsonline.com/20060142882.html) [Found on Google]
11. **[System Automation](#)**  
Find and Compare prices on **system automation** at Smarter.com.  
Sponsored by: [www.smarter.com](http://www.smarter.com) [Found on Ads by Yahoo!]
12. **[Plant Engineering](#)**  
Katzel Plant Engineering - August 1, 1998Nearly all industrial facilities have a building automation system (BAS) of some kind.  
[www.manufacturing.net/plm/article/CA113873](http://www.manufacturing.net/plm/article/CA113873) [Found on Ask.com]
13. **[Generating XML pages from project data from an automation ...](#)**  
The access to control data in a run-time system is configured more ... of an automation component, a machine or a system, and an engineering ...  
[www.freepatentsonline.com/20020112092.html](http://www.freepatentsonline.com/20020112092.html) [Found on Google]
- 14.

**Symantec Server Solutions**

Automated server solutions - Manage multiple servers.

Sponsored by: [www.symantec.com](http://www.symantec.com) [Found on LookSmart, Ads by Ask.com]

**15. Using ADO in Delphi 3 and 4 (before AdoExpress)**

How to Import Active Data Objects (ADO) type-libraries in Delphi 3 and 4 to create a wrapper around components that encapsulate the functional properties and methods.

[delphi.about.com/od/database/1/aa121101a.htm](http://delphi.about.com/od/database/1/aa121101a.htm) [Found on About]

**16. Defense Industry Job Fair**

Clearance Required. Interview with leading employers, search open jobs

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**17. An All in One Innovative and Flexible Software Solution for Circuit and System Des...**

... documentation for fluid power, automation and controls designed for engineering, maintenance and training. ... automation, electrical system  
[www.automationstudio.com/PRO/en/product/Profitable...](http://www.automationstudio.com/PRO/en/product/Profitable...) [Found on Yahoo! Search]

**18. (WO/2004/027608) SYSTEM FOR PREPARING A STANDARD FRAMEWORK FOR ...**

The automation solution can thus be created in a standardised manner on an engineering system (2), and randomly ported independently from the system (1).  
[www.wipo.org/pctdb/en/wo.jsp?wo=2004027608](http://www.wipo.org/pctdb/en/wo.jsp?wo=2004027608) [Found on Google]

**19. Engineering System**

Find engineering system on the Top Industrial Sites Here.

Sponsored by: [Engineering.EditorPicks.net](http://Engineering.EditorPicks.net) [Found on Ads by Yahoo!]

**20. Turbocraft Automation**

Seattle Turbocraft engineering machine design analysis automation systems integration prototypes ... with automation programming assistance.  
[www.turbocraft.com/automation.htm](http://www.turbocraft.com/automation.htm) [Found on Yahoo! Search]

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## Web Search Results for "engineering system automation runtime"

Now Searching: [Google](#) [Yahoo! Search](#) [Live Search](#) [All](#) [And More...](#)

41 - 60 of 72 from All Search Engines [\(About Results\)](#)

41. [Visual Basic .NET for Beginners](#)  
The first segment of a tutorial series About programming in VB.NET for people just starting out.  
[visualbasic.about.com/od/learnvbnet101...](http://visualbasic.about.com/od/learnvbnet101...) [Found on About]
42. [System 800xA 5.0 Engineering Overview](#)  
entire automation system or multiple automation systems, reducing engineering time ... System 800xA provides the ability to synchronize the ru...  
[search.abb.com/library/A&BLibrary.aspx?DocumentID=3...](http://search.abb.com/library/A&BLibrary.aspx?DocumentID=3...) [Found on Yahoo! Search]
43. [SHIFT and SMART-AHS: A Language For Hybrid System Engineering, ...](#)  
Highway System Consortium (NAHSC) was funded and other highway automation architectures were ... In system engineering, we have observed :  
[path.berkeley.edu/SMART-AHS/DSL97.html](http://path.berkeley.edu/SMART-AHS/DSL97.html) [Found on Ask.com]
44. [.NET and real-time - no contradiction](#)  
... engineering provides very many runtime systems. On ... Engineering" in the Computer & Automation magazine) and also standalone as runtime  
[www.kw-software.com/global\\_download\\_de/FA\\_.NET\\_.und....](http://www.kw-software.com/global_download_de/FA_.NET_.und....) [Found on Yahoo! Search]
45. [Web Forms - building blocks of an Asp.Net application \(Part 2\)](#)  
Introducing Web Form properties, methods and events. Taking a look at the IsPostBack property and postback processing  
[delphi.about.com/od/aspnet/!/aa060804a.htm](http://delphi.about.com/od/aspnet/!/aa060804a.htm) [Found on About]
46. [Foxboro automation system implemented at Cigar Lake uranium ...](#)  
Foxboro automation system Implemented at Cigar Lake uranium operation ... ISA releases new book on Improving automation system performance  
[www.controlglobal.com/industrynews/2005/143.html](http://www.controlglobal.com/industrynews/2005/143.html) [Found on Ask.com]
47. [SIMOTION Motion Control System - Automation and Drives Overview ...](#)  
Interpolation in the runtime system of SIMOTION V4.1 supplements the ... Is also easier since the PLCopen functionali... of the SCOUT enginee  
[www.automation.siemens.com/\\_en/portal/html/news/ne...](http://www.automation.siemens.com/_en/portal/html/news/ne...) [Found on Google]
48. [London Engineering, Information Technology system test software ...](#)  
Electronic Design Automation for customers who design and develop System on Chip devices and ... the disk subsystem, system management, ...  
[planetrecruit.com/jobs.cgi?j=2750958&more](http://planetrecruit.com/jobs.cgi?j=2750958&more) [Found on Ask.com]
49. [Foxboro | Products | Plant](#)  
Automation Systems. I/A Series System. Foxboro A2. System Overview. System Software. Engineering Tools. Controllers. I/O. Migration ...  
[www.foxboro.com/us/eng/products/automationsystems/...](http://www.foxboro.com/us/eng/products/automationsystems/...) [Found on Yahoo! Search]
50. [The new SIMATIC RF-MANAGER software: Simple management of RFID systems](#)  
nents engineering system and runtime. The engineering sys... tem lets you configure the RFID project .... SIMATIC Sensors and Totally Integrated  
[www.automation.siemens.com/simatic-sensors/ftp/rf...](http://www.automation.siemens.com/simatic-sensors/ftp/rf...) [Found on Google]
51. [perl561delta - Linux Command - Unix Command](#)  
Linux / Unix Command Library: perl561delta. Learn about its synopsis, description, options, and examples.  
[linux.about.com/library/cmd/blcmd1\\_perl561delta.h...](http://linux.about.com/library/cmd/blcmd1_perl561delta.h...) [Found on About]
52. [Open Control - The Standard For Pcbased Automation Technology ...](#)  
Engineering tools can. utilize manufacturer-specific functions of secondary. control systems via transparent data channels. CALL Periphery. Contr  
[ieeexplore.ieee.org/xel3/3017/13762/00634316.pdf?ra...](http://ieeexplore.ieee.org/xel3/3017/13762/00634316.pdf?ra...) [Found on Google]
53. [Industrial Automation Engineering & Factory Systems | Palletizer plugs and plays w...](#)  
... software architecture based on the embedded PLC programming and runtime system. ... of the automation system supports all current fieldbus...  
[www.controldesign.com/articles/2006/i31.html](http://www.controldesign.com/articles/2006/i31.html) [Found on Yahoo! Search]
- 54.

[SIMOTION SCOUT - Motion Control Systems - Siemens](#)

Engineering-Software SIMOTION SCOUT: The SCOUT project navigator is the common frame for all tools of the engineering system. This workben...  
[www.ad.siemens.de/mc/mc-sol/en/79be1285-d7cb-11d5-...](http://www.ad.siemens.de/mc/mc-sol/en/79be1285-d7cb-11d5-...) [Found on Ask.com]

55. [Smart Power Generation | Products | Automation World](#)

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The screenshot shows the Dogpile search interface. At the top, there is a navigation bar with links for Web, Images, Audio, Video, News, News, Yellow Pages, and White Pages. Below the navigation bar is a search bar containing the query 'engineering system automation runtime'. To the right of the search bar are buttons for 'Search' and 'Preferences'. Below the search bar, there is a message 'Now Searching...'. Underneath the search bar are several search engines: Google, YAHOO! SEARCH, LiveSearch, and Ask. To the right of these engines is a 'Learn More' link. At the bottom of the search results page, there is a footer with links for About, About Dogpile, Tools & Tips, Download Toolbar, Submit Your Site, Add Dogpile Search to Your Site, Privacy Policy, Terms of Use, and Contact Us. The footer also includes the copyright notice '© 2007 InfoSpace, Inc. All Rights Reserved.'

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engineering system automation runtime

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New Searching: [Google](#) [YAHOO! SEARCH](#) [LiveSearch](#) [All](#) [And More...](#)

61 - 72 of 72 from All Search Engines [\(About Results\)](#)

61. [Foxboro A](#)  
Engineering, Development, Foxboro A. 2. the. automation system. Information. systems. InTrack. InSQL. Asset Mgmt. Others. InBatch. Historian. I [www.foxboro.com/IR/rdonires/E38A3708-E64E-45A8-87...](http://www.foxboro.com/IR/rdonires/E38A3708-E64E-45A8-87...) [Found on Yahoo! Search]
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The screenshot shows the Dogpile search results page. The search query 'engineering system automation runtime' is entered in the search bar. Below the search bar, there are several search engines listed: Google, InfoSpace, Ask Jeeves, LiveSearch, and Dogpile. The Dogpile logo is on the left. The main content area displays a list of search results, which are mostly blank or contain placeholder text like 'No results found'.

engineering system automation runtime

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DOCUMENT-IDENTIFIER: US 20010037161 A1

TITLE: Method for controlling technical processes

----- KWIC -----

Summary of Invention Paragraph - BSTX (6):

[0004] The reference WO 91 19237 and a document by Hilding Elmqvist entitled: "A Uniform Architecture For Distributed Automation" (Advances in Instrumentation and Control, U.S., Instrument Society of America, Research Triangle Park, Vol. 46,

Summary of Invention Paragraph - BSTX (13):

[0010] The control program comprises software objects with addressable interfaces. For the project planning and programming of an actual software application, the project engineer/programmer chooses from a set of predefined basic object types, the basic object types required for the respective automation project. The selection of a basic object type corresponds within the framework of the project planning/programming to the instantiation of the corresponding basic object type. The respective instance of a basic object type is a basic object. The basic objects can be parameterized and interconnected by means of the interfaces of the basic objects, so that the basic objects respectively selected, as corresponding to the actual requirements, may be interconnected via their interfaces to form a control program and consequently finally form a software application for actual control functions.

Summary of Invention Paragraph - BSTX (20):

[0017] The project planning/programming advantageously takes place on an engineering system, while the software application is executed on a runtime system. The project planning or programming is consequently independent of the execution of the respective actual software application.

Brief Description of Drawings Paragraph - DRTX (5):

[0022] FIG. 3 illustrates a schematic representation of the development environment for the project planning or programming of the MC application on an engineering system and for the running of the planned/programmed MC application on a runtime system in accordance with an exemplary embodiment of the present invention.

Detail Description Paragraph - DETX (2):

[0026] Each automation project is based on a range of hardware modules. In the case of a movement control system, which is used throughout this description for purposes of simplicity, there are single-axis, three-axes or four-axes modules with corresponding drives.

Detail Description Paragraph - DETX (4):

[0028] Referring to the drawings, FIG. 1 illustrates a movement control software system, hereinafter "MC software system," comprising at least one **engineering system** ES (offline) and a **runtime system** RS (online). The ES is used by the user to create a movement control application, referred to hereinafter as "MC application" MCA. The RS executes the MCA. The creation of a MCA involves the system configuration, the creation of the user programs at the high-level language level and the transfer of this information into a form which can be executed internally in the RS (executable). The RS executes the executable.

Detail Description Paragraph - DETX (24):

[0048] Interfaces in the **runtime system** RS (RS interfaces) are fixed in the movement control **runtime system** directly. The interfaces are managed and addressed in the **engineering system** ES via type codes, so that their interconnection is possible.

Detail Description Paragraph - DETX (42):

[0066] In the **engineering system** ES, an actual control solution corresponding to the respective requirements of the client is configured and programmed using corresponding tools VEW, KON, PRG (management, configuration, programming), the commissioning being supported by further tools INB, MON, DEB (commissioning, monitoring, debugging). The execution of an actually planned software structure with the associated user program takes place in the **runtime system** RS.

Detail Description Paragraph - DETX (43):

[0067] The **engineering system** ES accordingly permits the handling of a movement control application (MC application) MCA in engineering terms and, in addition, also the representation of the **runtime system** RS during the engineering (from project planning through to commissioning).

Detail Description Paragraph - DETX (44):

[0068] For this purpose, the **engineering system** ES has access to an image of all the basic objects BO that are executable in the **runtime system** RS. Accordingly, at least the aforementioned feedback controller objects FCO, command variable objects CVO, program processing objects PPO, driver objects DRO and system manager objects SMO are provided as basic object classes.

Detail Description Paragraph - DETX (45):

[0069] Both in the **engineering system** ES and in the **runtime system** RS there exists, via the hardware HW-(programming unit or personal computer HW1 for the **engineering system** ES, control hardware HW2 for the **runtime system** RS), a complete **runtime system** with an operating system BS, tools for system management and basic objects BO.

Detail Description Paragraph - DETX (47):

[0071] For the logical sequences, movement operations or feedback control actions, basic elements or basic functions are available. The basic elements

are in this case connectable components, the basic objects BO, which represent the basic components for automation tasks within each case uniform interfaces. The basic functions are available within the framework of programmable functions, it being possible to use a basic set of commands for logic, movement (single axis, loose and close master-slave coupling, geometry network) and feedback control. The structure permits free programmability and flexible adaptation to the circumstances of the respective automation project by instantiating and connecting the respective objects.

Detail Description Paragraph - DETX (48):

[0072] The overall system comprises a combination of a runtime system, with a control core as a distributable control operating system, and an engineering system, which permits the graphic programming of the automation project via a corresponding interface.

Detail Description Paragraph - DETX (49):

[0073] This structure allows for a natural approach to the automation of technical processes, that is a step-by-step approach which begins with the definition of the respective functions, from which logical dependencies of individual functions or groups of functions arise or can be derived, and only becomes concerned with actual movement operations and feedback control actions possibly required for them when it pays attention to detailed considerations.

Claims Text - CLTX (6):

6. The method as claimed in claims 1, wherein said project planning is implemented on an engineering system and wherein said software application is executed on a runtime system.



US006757568B2

(12) **United States Patent**  
Birzer et al.

(10) Patent No.: **US 6,757,568 B2**  
(45) Date of Patent: **Jun. 29, 2004**

(54) **AUTOMATION SYSTEM FOR MERGING AUTOMATION COMPONENTS**

(75) Inventors: Johannes Birzer, Stulln (DE); Martin Kiesel, Poxdorf (DE); Georg Trummer, Erlangen (DE); Peter Wagner, Hersbruck (DE)

(73) Assignee: Siemens Aktiengesellschaft, Munich (DE)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 116 days.

(21) Appl. No.: **09/886,020**

(22) Filed: **Jun. 21, 2001**

(65) **Prior Publication Data**

US 2002/0082720 A1 Jun. 27, 2002

(30) **Foreign Application Priority Data**

Dec. 27, 2000 (DE) ..... 100 65 401

(51) Int. Cl.<sup>7</sup> ..... **G05B 11/01**

(52) U.S. Cl. ..... **700/18; 700/19; 700/20; 700/56; 700/61; 700/96**

(58) Field of Search ..... **700/1, 9, 18, 19, 700/20, 56, 83, 96, 61**

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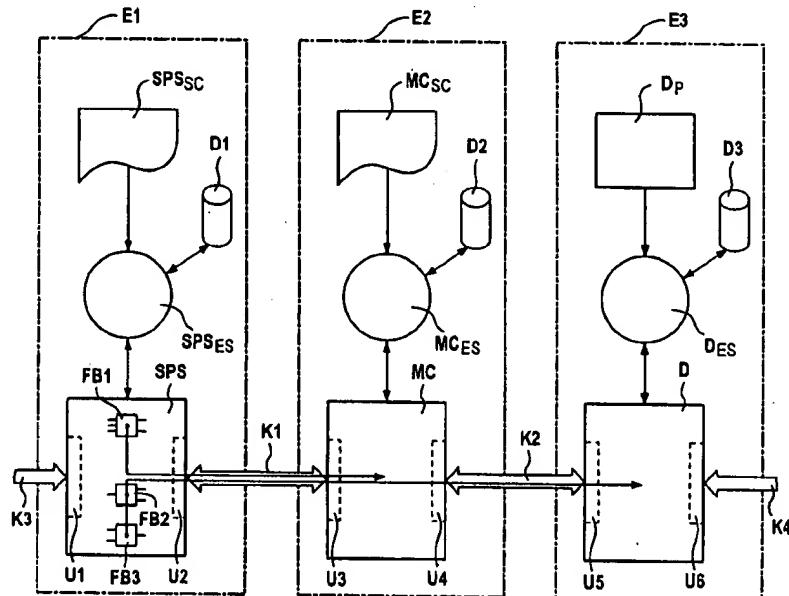
Assistant Examiner—Crystal J Barnes

(74) Attorney, Agent, or Firm—Baker Botts L.L.P.

(57) **ABSTRACT**

The present invention relates to an automation system in which a functionality of at least two components from a programmable logic controller which can be regulated as required and/or from a drive controller which regulates rotation speed and/or position, and/or from a motion controller which regulates complex operations is integrated. The integrated controller constructed in this way can additionally have a single processor equipped with every functionality, further specific interfaces incorporation of engineering system and runtime system (RS) into the integrated controller, a web server functionality, a project data configuration using a single control action and an integrated, extensive data management unit (DM).

**12 Claims, 14 Drawing Sheets**





US006600964B2

(12) **United States Patent**  
Hess et al.

(10) **Patent No.:** US 6,600,964 B2  
(45) **Date of Patent:** Jul. 29, 2003

(54) **METHOD FOR CONTROLLING TECHNICAL PROCESSES**

(75) **Inventors:** Karl Hess, Lichtenau (DE); Tino Heber, Freiberg (DE); Wolfgang Horn, Hohenstein-Ernstthal (DE); Steffen Kirste, Chemnitz (DE); Norbert Kosek, Chemnitz (DE)

(73) **Assignee:** Siemens Aktiengesellschaft (DE)

(\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 106 days.

(21) **Appl. No.:** 09/860,072

(22) **Filed:** May 17, 2001

(65) **Prior Publication Data**

US 2001/0037161 A1 Nov. 1, 2001

**Related U.S. Application Data**

(63) Continuation of application No. PCT/DE99/03550, filed on Nov. 5, 1999.

(30) **Foreign Application Priority Data**

Nov. 18, 1998 (DE) ..... 198 53 205

(51) **Int. Cl.:** G06F 19/00

(52) **U.S. Cl.:** 700/97; 700/86; 700/103

(58) **Field of Search:** 700/97, 103, 104, 700/26, 86, 181; 717/101, 102, 104, 120, 121

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**Primary Examiner:** Paul P. Gordon

(74) **Attorney, Agent, or Firm:** Baker Botts LLP

(57) **ABSTRACT**

Due to the diversity of the requirements to be met for controlling the movement of production machines, a system and method based on a range of hardware modules, which are provided with adequate computing capacity, a real-time operating system and specific basic functionality, a network (for example Profibus) for constructing a decentralized system with distributed control functionality and also operating and monitoring units with planned interfaces is disclosed. The invention comprises a configurable, distributable and programmable control software system for individually adapting the control solution to the client's requirements, with which the planned control solution is distributed among hardware modules and in which an engineering system used for management, configuration, programming, monitoring, debugging and commissioning.

8 Claims, 6 Drawing Sheets

